

REVERSE-RENDERING METHOD FOR DIGITAL MODELING

ABSTRACT OF THE DISCLOSURE

5 A method for automatically or semi-automatically constructing a digital 3D model
of a scene from photographic data and photogrammetry data includes defining an initial
rough model as a solution estimate. A reverse rendering step includes a second-order
solution method that employs automatic differentiation techniques to accurately
compute derivatives of an error function. In an embodiment of the method, at least one
10 camera is placed within the scene being constructed, and photographic data from this
camera is used in the solution process.